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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/857,960	06/12/2001	Johann Engelhardt	LASP:111-US-	2526
24041	7590	09/08/2004	EXAMINER	
SIMPSON & SIMPSON, PLLC 5555 MAIN STREET WILLIAMSVILLE, NY 14221-5406			STOCK JR, GORDON J	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/857,960

Applicant(s) **AK**

ENGELHARDT, JOHANN

Examiner

Gordon J Stock

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 32-48 and 54-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 32-48, 54-58 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 32, 34, 36-38, 43-45, 47-48, 54-58** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Schultz et al. (6,180,415)** in view of **De Brabander et al. (4,752,567)**.

As for **claim 32**, Schultz in a plasmon resonant method discloses: assigning particles with specific diameters and specific characteristics and detecting said structures by detecting said particles specifically bound in or on said structures using light that acts on said particles (cols. 3; lines 1-35; col. 4, lines 1-30; col. 5, lines 45-65; col. 8, lines 1-30; col. 9, lines 25-45). As for constant characteristics independent of time, Schultz discloses many constant characteristics of the particle that are solely dependent upon wavelength of light (col. 9, lines 45-65). Schultz discloses spectral images (Figs. 1 and 2; col. 15, lines 40-60) and suggests that photographs or visual images may be recorded (col. 17, lines 55-60). And evaluates recorded images using digital image processing (col. 17, lines 25-65; col. 18, lines 1-55). And suggests that electron microscopic images be taken with the spectral data (col. 22, lines 45-65). As for a detected image and a microscopic image of the particles and the structures, he is silent. However, De Brabander in a method of visualizing individual submicroscopic metal particles teaches having both a DIC and a brightfield image taken in order to differentiate between small gold particles and smaller organelles (col. 30-45). Therefore, it would be obvious to one of ordinary skill in the

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art at the time the invention was made to have the method record an image of the detected particles and at least one microscopic image of the structures in order to discern the difference between small structures and small particles.

As for **claim 34**, Schultz in view De Brabander of discloses everything as above (see **claim 32**). However, he is silent concerning selecting a wavelength of suitable light as a function of said diameter and characteristics of particles. However, he does teach the plasmon signal occurring on said particles (col. 9, lines 18-45). And he does state that the wavelengths are dependent on size and characteristics of particles (col. 9, lines 46-60). And De Brabander suggests that light wavelength is dependent on diameter and characteristics of the particle (col. 4, lines 65-68; col. 5, lines 1-3). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have the wavelength of light be set as a function of said diameter and said specific characteristics in order to detect the specific plasmon signals of the particle under detection.

As for **claim 36**, Schultz discloses areas of preparation to be differentiated are provided with particles of various diameters, so that said areas to be differentiated are detected simultaneously or successively by means of suitable light of various wavelengths (col. 19, lines 25-55).

As for **claims 37-38**, Schultz states that the particles are metallic and maybe ellipsoidal (col. 10, lines 11-25; col. 9, lines 65-67).

As for **claims 43-45, 47-48**, Schultz states that said light is produced using a high pressure lamp; means for wavelength selection and polarization; laser as light source; means for

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selecting wavelengths connected in series or integrable filters (Schultz: col. 3, lines 1-20; col. 13, lines 40-50; col. 25-40; col. 17, lines 1-25).

As for **claim 54**, Schultz states that said particles are coated on a surface (Schultz: col. 14, lines 49-65).

As for **claims 55 and 56**, they disclose everything as above (see **claim 32**). As for the microscopic image it can be a reflected light microscopic image depending on how the light hits the sample (Schultz: Fig. 3) or transmitted light microscopic image (Schultz: Fig. 5). In addition, De Brabander discloses transmissive or reflective modes for visualizing particles (col. 6, lines 2-10)

As for **claims 57-58**, they disclose everything as above (see **claim 32**). Schultz discloses transmitted light or reflected light microscopic images. He is silent concerning having a plurality of both at differing detection/lighting angles. However, De Brabander in a method of visualizing particles discloses using a plurality of transmission and reflection modes that suggest different lighting/detection angles are used such as dark field and transmitted bright field light and interference reflection microscopy to better visualize particles in a biological preparation and that contrast images of the structures may need other images without contrast such as just brightfield observation in order to discern the particles from smaller biological structures in the sample (col. 6, lines 2-10 and lines 35-45). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have a plurality of reflection/transmission mode images at different angles to improve visualization and identification of the particles used by being able to discern the particles from the biological structures in the sample.

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3. **Claims 33, 35, 39-42** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Schultz et al. (6,180,415)** in view of **De Brabander et al. (4,752,567)** further in view of **Yguerabide et al. (6,214,560)**

As for **claims 33, 35, 39-42**, Figs. 3 and 5 of Schultz suggest a conventional polarization transmission or a conventional polarization reflection microscope may be used. They disclose everything as above (see **claim 32**). As for Mie scattering being the basis of particle detection and that the selected wavelength being a function of said diameter and characteristics, Schultz is silent. However, Yguerabide teaches the following: that a wavelength depends on the size and characteristics of the particles and that the particles will be detected through Mie scattering and that the wavelength of said light is larger than or approximate to size of particles; particles are detected through transmission mode; through a polarization transmission microscope; through reflection microscope; through polarization reflection microscope (col. 9, lines 50-67; cols. 10-13; cols. 19-24). Therefore, it would be obvious to one skilled in the art to have the particles detected based on Mie scattering for scattering particles' sizes and characteristics are dependent on wavelength. And it would be obvious to one of ordinary skill in the art at the time the invention was made to have the wavelengths selected at a function of said diameter and characteristics of particles in question in order to detect particular Mie signals dependent upon the size and characteristics of a particle at a particular wavelength.

4. **Claim 46** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Schultz et al. (6,180,415)** in view of **De Brabander et al. (4,752,567)** further in view of **Yguerabide et al. (6,214,560)** further in view of **Kaiser (4,169,676)**.

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As to **claim 46** they disclose everything as above (see claim 32). In addition, Yguerabide discloses measuring all scattering signals such as from Mie-signals (col. 22, lines 1-30). He is silent concerning a parametric oscillator. However, Kaiser in a method for determining contents of metabolic products in blood teaches that parametric oscillators may be used in place of adjustable lasers (col. 3, lines 1-6). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have a parametric oscillator replace an adjustable laser, for they are art-recognized equivalents in wavelength adjustable light sources.

Response to Arguments

5. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection. As for the allowable subject matter as set forth in the prior office action, the Examiner apologizes for the inconvenience caused by the grounds of rejection for **claims 57-58**, but after performing an updated search, the Examiner found grounds of rejection for **claims 57-58**.

Fax/Telephone Numbers

If the applicant wishes to send a fax dealing with either a proposed amendment or a discussion with a phone interview, then the fax should:

- 1) Contain either a statement "DRAFT" or "PROPOSED AMENDMENT" on the fax cover sheet; and
- 2) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

Papers related to the application may be submitted to Group 2800 by Fax transmission. Papers should be faxed to Group 2800 via the PTO Fax machine located in Crystal Plaza 4. The

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form of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Machine number is: (703) 872-9306

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon J. Stock whose telephone number is (571) 272-2431.

The examiner can normally be reached on Monday-Friday, 10:00 a.m. - 6:30 p.m.

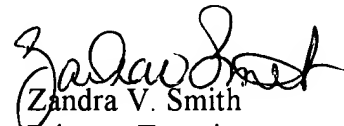
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr., can be reached at 571-272-2800 ext 77.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private Pair system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



gs

August 31, 2004


Zandra V. Smith
Primary Examiner
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